Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-33 (Cancel)

34. (Currently Amended) A peptide immunogen of about 20 to 100 amino acids long comprising: (i) a helper T cell (Th) epitope selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50;~~SEQ ID NOS: 3, 5, 6, 9, and 10;~~ (ii) an N-terminal fragment of Aβ1-42 peptide, SEQ ID NO:1; consisting of from 10 to 28 amino acid residues wherein each fragment comprises amino acid residue 1 of the Aβ1-42 peptide or an immunologically functional analog of the N-terminal fragment of Aβ1-42 peptide; and (iii) optionally a spacer consisting of at least an amino acid to separate the immunogenic domains.

35. (Previously Presented) A peptide immunogen of claim 34, further comprising a spacer consisting of at least an amino acid to separate the immunogenic domains.

36. (Previously Presented) A peptide immunogen of claim 34, wherein the spacer is selected from the group consisting of an amino acid, and (α, ε-N-Lys).

37. (Previously Presented) A peptide immunogen of claim 36, wherein the spacer is ε-N-Lys.

38. (Previously Presented) A peptide immunogen of claim 34, wherein the N-terminal fragment of Aβ1-42 peptide is selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunologically functional analog thereof.

39. (Previously Presented) A peptide immunogen of any one of claims 35, 36, or 37, wherein the N-terminal fragment of Aβ1-42 peptide is selected from the group consisting

of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2.

40. (Currently Amended) A peptide immunogen of claim 34, wherein Th is selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~.

41. (Currently Amended) A peptide immunogen of any one of claims 35, 36, or 37, wherein Th is selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~.

42. (Currently Amended) The peptide immunogen represented by one of the following formulae:

$(A)_n$ - (N-terminal fragment of Aβ1-42 peptide)-$(B)_o$-$(Th)_m$-X; or

$(A)_n$-$(Th)_m$-$(B)_o$-(N-terminal fragment of Aβ1-42 peptide)-X;

wherein

each A is independently an amino acid;

each B is a linking group selected from the group consisting of an amino acid, and α, ε-N-Lys;

Th comprise an amino acid sequence that constitutes a helper T cell epitope, selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~ and an immune enhancing analog thereof;

(N-terminal fragment of Aβ1-42 peptide) is 10 to about 28 amino acid residues and wherein each fragment comprises EFRH of the Aβ1-42 peptide and immunologically functional analog thereof;

X is an α-COOH or α-$CONH_2$ of an amino acid;

n is from 0 to about 10;

m is from 1 to about 4;

and o is from 0 to about 10.

43. (Previously Presented) A peptide immunogen of claim 42, wherein the spacer is ε-N-Lys.

44. (Previously Presented) A peptide immunogen of claim 42, wherein the N-terminal fragment of Aβ1-42 peptide is selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunologically functional analog thereof.

45. (Previously Presented) A peptide immunogen of claim 43, wherein the N-terminal fragment of Aβ1-42 peptide is selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunologically functional analog thereof.

46. (Currently Amended) A peptide immunogen of claim 42, wherein Th is selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~.

47. (Currently Amended) A peptide immunogen of claim 43 wherein Th is selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~.

48. (Currently Amended) A peptide immunogen of claim 44 wherein Th is selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~.

49. (Currently Amended) A peptide immunogen of claim 45 wherein Th is selected from the group consisting of SEQ ID NOS: 45, 46, 49, and 50~~SEQ ID NOS: 3, 5, 6, 9, and 10~~.

50. (Previously Presented) A composition comprising a peptide immunogen of claim 1 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

51. (Previously Presented) A composition comprising a peptide immunogen of claim 35 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

52. (Previously Presented) A composition comprising a peptide immunogen of claim 36 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

53. (Previously Presented) A composition comprising a peptide immunogen of claim 4 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

54. (Previously Presented) A composition comprising a peptide immunogen of claim 38 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

55. (Previously Presented) A composition comprising a peptide immunogen of claim 39 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

56. (Previously Presented) A composition comprising a peptide immunogen of claim 40 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

57. (Previously Presented) A composition comprising a peptide immunogen of claim 41 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

58. (Previously Presented) A composition comprising a peptide immunogen of claim 42 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

59. (Previously Presented) A composition comprising a peptide immunogen of claim 43 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

60. (Previously Presented) A composition comprising a peptide immunogen of claim 44 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

61. (Previously Presented) A composition comprising a peptide immunogen of claim 45 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

62. (Previously Presented) A composition comprising a peptide immunogen of claim 46 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

63. (Previously Presented) A composition comprising a peptide immunogen of claim 47 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

64. (Previously Presented) A composition comprising a peptide immunogen of claim 48 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

65. (Previously Presented) A composition comprising a peptide immunogen of claim 49 and a pharmaceutically acceptable adjuvant and/or carrier selected from the group consisting of alum, saponin, squalene, monophosphoryl lipid A (MPL), polysorbate 80, QS21.

66. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 50.

67. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 52.

68. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 53.

69. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 54.

70. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 55.

71. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 56.

72. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 57.

73. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 58.

74. (Previously Presented) A method of preventing Alzheimer's disease by administrating to a mammal a composition of claim 59.

75. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 60.

76. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 61.

77. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 62.

78. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 63.

79. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 64.

80. (Previously Presented) A method of preventing or treating Alzheimer's disease by administrating to a mammal a composition of claim 65.

81. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 50.

82. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 52.

83. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 53.

84. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 54.

85. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 55.

86. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 56.

87. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 57.

88. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 58.

89. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 59.

90. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 60.

91. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 61.

92. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 62.

93. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 63.

94. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 64.

95. (Previously Presented) A method of producing antibodies to Aβ1-42 peptide that is cross reactive to soluble Aβ peptides and brain tissue plaques formed therefrom by administering a composition of claim 65.

96. (Previously Presented) A composition comprising an Aβ fragment linked to a tetanus toxoid or toxoid derivative carrier molecule to form a conjugate, wherein the Aβ fragment is an N-terminal fragment selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunogenic analogs thereof.

97. (Previously Presented) A composition comprising an Aβ fragment linked to an *E. coli* toxoid or toxoid derivative carrier molecule to form a conjugate, wherein the Aβ fragment is an N-terminal fragment selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunogenic analogs thereof.

98. (Previously Presented) A composition comprising an Aβ fragment linked to a diphtheria toxoid or toxoid derivative carrier molecule to form a conjugate, wherein the Aβ fragment is an N-terminal fragment selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunogenic analogs thereof.

99. (Previously Presented) A composition comprising an Aβ fragment linked to a T cell epitope molecule to form a conjugate, wherein the T cell epitope is malaria CS and the Aβ fragment is an N-terminal fragment selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunogenic analogs thereof.

100. (Previously Presented) A composition comprising an Aβ fragment linked to a T cell epitope molecule to form a conjugate, wherein the T cell epitope is hepatitis B surface antigen CS and the Aβ fragment is an N-terminal fragment selected from the group consisting of the first 10 amino acids of SEQ ID NO: 2 the first 12 amino acids of SEQ ID NO: 2, and the first 28 amino acids of SEQ ID NO: 2 and the immunogenic analogs thereof.